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AUTHOR Dombrowski, P. M.
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ABSTRACT

Scholars, teachers, and practitioners of technical communication are empowered by developments in postmodernism, especially in the face of the historical privileging of the generators of specialized knowledge. Developments in four areas--the rhetoric of science, social constructionism, feminist critiques of science, and ethics--are of a humanistic nature and at the same time of a postmodernistic nature. Major works in the rhetoric of science show that science is only a special form of negotiated opinion, not the antithesis of opinion. Social constructionism duplicates the basic thrust of the rhetoric of science. The most important impact of feminism on technical communication comes through feminist critiques of science which challenge the privilege historically accorded scientific knowledge and question the assumptions underlying the authority of science. Both feminist and ethicist critiques compel the conscientious reappraisal of what exactly science is, of how the principles of science mesh with the practice, and of how science historically both shapes and is shaped by society. All four ideas resonate with the ideas of the co-fathers of humanism, Protagoras and Socrates. Postmodernism empowers scholars, teachers, and practitioners of technical communication to criticize the authority, assumptions, and claims of science and technology while it compels them to contextualize their practice. It also alerts them to be wary against using science and technology as a subterfuge from the messiness of social contingency and the weightiness of ethical judgments. (Contains 29 notes.) (RS)

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P. M. Dombrowski, Asst. Prof.
English, Ohio University, Athens

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# Post-Modernism as the Resurgence of Humanism in Technical Communication

Postmodernism is revealing itself in technical communication in several ways, ways which are, perhaps paradoxically, also humanistic. My thesis is that developments in four areas--the rhetoric of science, social constructionism, feminist critiques of science, and ethics--are of a humanistic nature and at the same time of a postmodernistic nature.[1]

(In this paper, I will use "science" and "technology" interchangeably because they both deal with specialized knowledge, both have been similarly privileged historically, and both feel similar ramifications from postmodernism.)

Postmodernism has many definitions. For technical communication, I think it can roughly be characterized through its familiar "anti-"s such as anti-essentialism, anti-authoritarianism, anti-rationalism, anti-foundationalism, anti-formalism, even anti-humanism. It reveals the otherwise-hidden side of science. It reveals, that is, the deconstructive "absence" tacitly denied in the "presence" of science, when one

[1] For the purposes of this paper, I will use "science" and "technology" interchangeably because they both deal with specialized knowledge, both have been similarly (even interrelatedly) privileged historically, and because postmodernism has similar ramifications in each.

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chooses to approach a problem scientifically; likewise for technology.[2]

The expression of postmodernism in technical communication has two aspects, debasement and elevation. Debased are

-- received, specialized knowledge;

-- foundations and foundational authority;

-- rationalism (with its logic of coherence, identity, and non-contradiction);

-- and the very idea of science (with its claims to objectivity, absoluteness, and disinterestedness).

Elevated are

-- subjectivity and social contingency;

-- mutability and pluralism;

-- and the historically-excluded half of humanity, women.

Let me explain how recent developments in the four areas exemplify these debasements and elevations. Afterward I will discuss how postmodernism is very much like humanism, particularly the humanism which originated in the sophists and Socrates [granting other ways in which it very unlike, even antithetical to, humanism].

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[2] In revealing the hidden "absence" behind what is "presence," postmodernism does not necessarily urge the privileging of an inverse. A simple inversion would only reinforce the dualisms that postmodernism actually challenges [whether Platonic, Cartesian, positivist, or otherwise--e.g., appearance:reality, fact:opinion, mind:body, subject:object, nature:human, truth:error]. Instead of continuing a fixation on dualism and the choosing between binary opposites, postmodernism, Patricia Waugh explains, advocates the flexible movement between and beyond the opposition.

## I. THE RHETORIC OF SCIENCE

Major works in the rhetoric of science by Alan Gross, Charles Bazerman, and R. Allen Harris have extended pioneering work by S. Michael Halloran and Carolyn Miller. These studies show that science [in its origins, underpinnings, methodologies, and practices] is only a special form of negotiated opinion, not the antithesis of opinion. They show the great importance of persuasion, of social context and consensus, of ethos and pathos as well as logos. These revelations belie [deconstructively] the absolutism and facticity commonly attributed to science.

There are various meanings of the term "rhetoric of science." I make sense of the term through three levels at which science is rhetorical. The first and most basic level has to do with language in the terms which name concepts and represent phenomena.[3] Though in common usage a scientific term <u>is taken</u> as referring to a thing, from the perspective of the rhetoric of science it is only a name the meanings of which lies not in a thing but in relation to other words, in particular the words of theoretic systems.[4][5][6]

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[3] These includes terms with potent currency such as "electron," "wave," and "force" as well as terms which have passed from currency such as "phlogiston," "ether," and "impetus."

[4] This is the crux Carolyn Miller identifies in her review in <u>Rhetorica</u> of Bazerman's <u>Shaping Written Knowledge</u>, the question of how deeply science is rhetorical. Miller says that Bazerman represents science as highly rhetorical while retains empirical, material referentiality as the cornerstone of science.

The second level has to do with the overt social debate by which scientific theories come to be ratified, an agonistic exchange that is obviously rhetorical.[7]

The third level has to do with the role of science in society and the choosing of science as a way to conceive of or approach an issue. This level is less obvious because we are so used to taking for granted that science reveals the real truth of the matter [rather than only a particular species of opinion about it]. We are not used to thinking of science itself as a deliberate theory-choice, actually world-view-choice, though it is so nonetheless.[8][9][10][11]

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[5] Using Kenneth Burke's notion of "terministic screens," scientific terms at root are part of a particular terministic (i.e., theoretic) system. We always perceive and conceive through such linguistic screens, never having unmediated contact with the thing-in-itself.

[6] Among some rhetoricians of science, there is even an extreme view holding that words (practically if not absolutely) constitute things (rather than the reverse). The 1990 conference of the International Society for the History of Rhetoric at Johns Hopkins featured a panel debate between rhetoricians of science (including Gross and Miller) and traditional philosophers of science (including Melia and McGuire). This debate focused on precisely the question of the reality of the electron--whether it existed prior to and separate from our language, theories, instruments, and observations or whether it is actually constituted by and in the term "electron."

[7] A good example of the use of rhetoric in science at this level is Craig Waddell's study of the role of ethos and pathos in the rhetoric of scientists both among themselves and to the public.

[8] Gross points out, as does the philosopher of science Paul Feyerabend, that viewing the heavens scientifically rather than, say, religiously is a matter of choice, a matter of opinion.

[9] A striking and more controversial example--and that is precisely the point--concerns abortion. Governmental panels struggling to define the conditions of permissibility of abortion and more importantly when a fetus will be considered a human being have had to decide even the constitution of the panels themselves. Should scientists have a say in such decisions, and on what grounds? Biologists, lawyers, ethicists, feminists, and the religious all have

## II. SOCIAL CONSTRUCTIONISM

Social constructionism duplicates the basic thrust of the rhetoric of science and so I will make only three short points.[12]

First, social constructionism of the sort advanced by Berger and Luckmann in The Social Construction of Reality reveals even everyday reality as socially constructed. Such constructions are so widely ratified and heavily sanctioned, so taken for granted,

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participated in such panels and have struggled to persuade in the decision making. Which will prevail is precisely debatable, rhetorical.

Or take composition research. In order to help others to write better, should we turn to science and conduct scientific research (whether quantitative or qualitative)--the contemporary route--or should we read and examine good writer and ask good writers about how they write--the traditional and some would say more humanistic route to teaching writing.

[10] Some rhetoricians take the extreme position that science is all and nothing but rhetoric ("rhetoric" in the good, productive sense). Among these is Gross in his notion "the rhetoric of science without constraints." Others take a modest position holding that science is intrinsically and inescapably rhetorical but that it is more than that. For these, science is an instance of rhetoric that is empirically conditioned (or "constrained," using Gross's term). This, I would say, is also the Rortian position in which our socially negotiated knowledge--essentially systems of beliefs--must accommodate the physical, pre-existent world against which we empirically "bump our heads."

[11] My own position is that rhetoric and science form a continuum one end of which is the hardest of facts, (relatively) raw empirical encounters with the physical world, the other end of which is the most socially contingent of opinions (such as the theory-choice of deciding whether to view the heavens astronomically or astrologically). One way of looking at (and thus constituting) a world highlights the scientific, while the other highlights the rhetorical with quite different values, principles, and goals. Neither of these two ends of the continuum is radically, absolutely separate from the other. Thus, we need not conceive of science and rhetoric dualistically as binary opposites, driving us to search for the truth between them (modernistically per Patricia Waugh) but, as outlined above, flexibly through deliberate(-d) choosing contingent on our purposes (postmodernistically per Waugh).

[12] With its roots in sociology, anthropology, psychology and the philosophy of science, social constructionism may be said to be the scientistic approach to the rhetoric of science.

that they are specifically taken as not socially constructed. Berger and Luckmann are clearly postmodernistic in revealing such inapparent absences.

Second, Neil Evernden in The Social Creation of Nature reveals that what we consider as Nature, the supposedly incontrovertible given that the natural sciences study, is quite otherwise--it is a social construct whose "constitution" changes with the culture, times, and interests involved. This revelation challenges the simplistic duality holding that science deals with non-human Nature while rhetoric deals with what is not Nature--opinion, thoughts, and arguments.

Third, many social constructionists specifically oppose the traditional, received view of communication as springing wholly formed from the head of an individual; this anti-individualism is decidedly postmodernistic.[13][14]

## III. FEMINISM AND GENDER ISSUES

Mary Lay has written several important articles on feminist theory while Jo Allen and Sam Dragga have written separate

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[13] For example, LeFevre, Faigley, and Blyler and Thralls expansion on Faigley.

[14] Similarly, many also oppose the traditional advice to accommodate carefully one's audience, because such communication reinforces and reproduces the prevailing power and economic structures that many times are discriminatory and abusive; such social criticism is obviously postmodernistic.

articles on gender issues. The most important impact of feminism on technical communication comes less directly, however, through feminist critiques of science [and of technology to a lesser extent]. These critiques challenge the privilege historically accorded scientific knowledge and question the assumptions underlying the authority of science.[15]

Practically all feminist critics hold that science is both overly narrow in focusing only on (presumably) objective knowledge, and fundamentally gendered in favoring male thinking, values, and interests (such as in the prediction and control of nature). Many also question the validity of the methodolcgies of science, in particular objectivization (especially of people) and disinterested observation (an impossibility, they contend). Regardless of the diversity of opinions on science <u>in principle</u>, however, all feminist critics agree that science <u>in practice</u> is biased toward males in its research topics, in its instrumental goals, and in its tacit political assumptions.[16][17]

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[15] Among these challenged assumptions are that science reveals the absolute and non-contingent; that objectivity is both possible and desirable; that scientific knowledge is the only true knowledge; and that science is unbiased and indifferent to social interests.

[16] Ruth Bleier, for instance, holds that science is fundamentally and irremediably masculinist. Helen Longino and Sandra Harding, on the other hand, are less sure that science is innately gender-biased. And Evelyn Fox Keller grants science its intrinsic validity (though not its historic primacy). Fox Keller argues for the co-validity and co-existence of science <u>and</u> feminism, of biological determinism <u>and</u> social constructionism, sex <u>and</u> gender.

[17] Evelyn Fox Keller, Susan Gorelick and others point out that feminism must continually critique not only the predominant culture but also itself. Fox Keller explains in <u>Conflict in Feminism</u> that the continual debate within feminism not just about its relation to science but also about what feminism itself is is not a shortcoming but a confirmation of the immense open-ended potential of women

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## IV. ETHICS

There are two majors views on the relation of ethics to science and technology. The traditional view is separatist while the postmodernist view is holistic [holding that science and technology and ethics are inextricably wedded]. I will focus only on the latter view.

Ethical critics such as Jacques Ellul and Langdon Winner point out the danger of mistaking science and technology as separate from ethics. The chief danger is that one thereby distances them from deliberate(-d) control.[18] For such critics, assuming science and technology as autonomous is both a self-deception and an abandonment of ethical responsibility.[19]

Steve Katz argues that expediency in the form of technical excellence can all too easily become the cardinal value in

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defining womanhood. Feminist critiques are obviously postmodern in admitting no definitive resolution while implicitly affirming the vital importance of social negotiation. At the same time, they are also clearly humanistic in affirming the inalienable worth and validity of the half of humankind traditionally excluded from power and privilege.

[18] As in the "autonomous technology" of Winner and the "technicism" of Ellul.

[19] The rhetoricians Kenneth Burke and Richard Weaver (and a host of others) point out regarding ethics that science is a rhetorically-mediated social construct that masks its own value-ladenness. Science as a value system valorizes objectivity, absoluteness, impersonalness, homogeneity, disinterestedness, disengagement, distance, and consensual conformity; likewise of technology. Burke, Weaver, and others also emphasize that one's choosing to look at anything through the terministic and conceptual lens of science is itself an ethical decision. We therefore cannot escape making value judgments, though we may deceive ourselves that we can.

technology. Expediency can become a circular, self-confirming imperative that subordinates all other values [while it distances humans from other humans]. Such was the case, Katz says, in the Nazi extermination technology that elevated technical excellence above the ethical weighing of the uses to which technology was put.

Dale Sullivan critiques the technologizing of technical communication as only a set of impersonal skills and conventional forms.[20][21] Sullivan presents an alternative, humanistic approach that contextualizes both technology and technical communication within the larger society. It also encourages the critical examination of forms, genres, and lines of argument.[22]

In a more obviously postmodernist vein, I have applied to technical communication the ethical theory of Emmanual Levinas, a continental ethicist admired by Jacques Derrida. Levinas emphasizes "the other" of phenomenology and deconstructionism, and the importance of "facing" the radically different real other person affected by one's decisions. A practical illustration of Levinasian "facing the real, radically other" is the Vietnam Memorial in Washington. Facing the monument, the viewer reads

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[20] This technologized technical communication is, Sullivan contends, ethically irresponsible because it implicitly grants an unwarranted, almost autocratic authority to technology.

[21] It also disempowers the communicator by viewing him or her only as a worker who slavishly acquiesces to the forces of production and technology.

[22] Responsible social action, Sullivan says, requires the exercise of practical wisdom or phronesis. This prudential judgment, basically ethics, must be taught in our technical communication classrooms.

the real other person's name against the field of the reader's own visual reflection in the polished granite wall.[23][24][25]

Both feminist and ethicist critiques compel the conscientious reappraisal of what exactly science is, of how the principles of science mesh with the practice, of how science historically both shapes and is shaped by society, and of how important science should be in our society, all postmodernistic concerns.

## V. DISCUSSION

All these developments are humanistic both strictly and loosely. Strictly speaking, rhetoric and ethics were part of the studia humanitatis of Renaissance humanism, grounded in turn in the trivium and quadrivium of classical Greece. Loosely, feminism obviously was not part of this curriculum but is

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[23] Levinas also explains that we must continually face the unremitting task of ethical examination. We might say, paraphrasing Socrates, that the ethically unexamined act is not worth doing.

[24] Another instance is the post-Challenger requirement by NASA that one of the shuttle astronauts must serve (as a Levinasian real face) on groups making critically important about the shuttle.

[25] In my own writing I have also critiqued the elevation of impersonal systems of procedures over personal judgment and responsibility in the Challenger disaster. The technologizing of ethics by codifying decision-making into impersonal procedures can distance the decision-maker from responsibility for the decision. Procedures are also often used to rationalize decisions already made separate from the (supposed decision-making) procedures.

nonetheless consonant with the tenor of humanism in affirming the innate capacities of humanity; likewise social constructionism.

More importantly, all four areas resonate with the ideas of the co-fathers of humanism, Protagoras and Socrates [a paternity issue with which I will not grapple here]. Protagoras, the sophist often called the father of humanism, in his dictum, "Man is the measure of all things . . . ,"

--is obviously constructivist [and rhetorical, though in a narrow, sophistic manner];

--could have supported, as a relativist, postmodernist cultural critiques of science and technology;

--and might conceivably have supported the feminist project of actively, flexibly redefining womankind, if not humankind.

In a moralistic vein, Socrates's dictum, "the unexamined life is not worth living," certainly resonates

--with feminist and ethicist critiques of science and technology;

--with social constructionism generally in revealing the true inapparent reality belied by the false apparent reality [science appears to be, by generation as well as by definition other-than-rhetoric, yet careful critical examination reveals it to be inescapably rhetorical];

--and perhaps [though this is stretching] with the rhetoric of science too (at least as noble rhetoric] [at least in Plato's representation of Socrates as confounding established knowledge and authority through his social, dialectic criticism].

Indeed sophism generally, in its positive sense, is in many ways consonant with postmodernism. In its overthrow of absolutism and in its rhetorical shaping of meaning, it certainly resembles postmodernism. It also, like postmodernism, challenges rationalism

--in its antilogic [presenting opposing positions on an issue] [which also resonates with the antinomies of Kant, who Waugh cites as a precursor of postmodernism];

--in its eristics [emphasizing the winning of arguments rather than the pursuit of absolute truth];

--and in its relativism [the condition of possibility of antilogic and eristics].

And if we include Socrates, sophism also instances broad culture criticism such as we find in postmodernist critiques of the entrenched structures of power and knowledge and its critiques of race, class, and gender [which critiques are necessarily humanistic in affirming the intrinsic, equal humanity of all people].

Indeed, the recent [relative to the ancient sophists]

revival of interest in the sophists [and the positive reconceptualization of them as socially responsive critics of culture and innovators of new "knowledge"] began with Hegel (and Nietzsche to a lesser extent), to whom many postmodernists trace their intellectual roots.[26] More recently, Tullio Maranhao and Susan Jarratt have argued for the sophists as Ur-postmodernists (if we include Socrates as a sophist). Maranhao says Socrates [in his methexis] understood truth as personally meaningful and socially developed through dialogic interchange. This Socratic view opposes the scientistic view of truth [in mimesis] as the product of detached reflection and external referentiality. Science, Maranhao explains, is an expression of modernism [in emphasizing impersonal, individualistic, and anti-altruistic professionalism and expert knowledge], while postmodernism calls for "a permanent mode of skepticism" a la Socrates.

Susan Jarratt contends that the sophists emphasized the constitutive power of language itself as a basis for knowledge [rather than pre-existent, external, absolute Truth], just as contemporary epistemic rhetoric and postmodernism do. Sophistic rhetoric tapped into the "critical capacity for exposing the contradictions in the dominant discourse" (xxiv). We can learn from them, Jarratt explains, how to challenge hierarchies and the institutions those hierarchies keep in place (xxiv). Such

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[26] Nietzsche says in Will to Power, "Every advance in epistemology and moral knowledge has reinstated the Sophists."

challenging of the received social order through a revelatory cultural and rhetorical criticism is exactly the postmodernist project.[27] Thus postmodernism for technical communication amounts [at least at present] to a resurgence of humanism. [QED]

From a radical perspective, postmodernism appears to signal the end of science and technology and with them technical communication. Without foundation, without authority, without even the possibility of knowing anything with certainty, the great hopes traditionally attached to science and technology [advancing knowledge, improving the human condition, banishing error, raising ourselves from a fallen or lost condition, even transcendence] evaporate as science [as well as technology] is revealed to be an ideology.

I believe, however, that it is a mistake to take these developments too radically; indeed, radicalness might be said from a postmodernist perspective to be a sort of illegitimate absolutism. These developments show instead accommodation between the sciences and the humanities, putting them on par

[27] Jarratt also points out that the rhetoric of Aristotle with its dualistic distinction between true knowledge and probable knowledge has predominated in the history of rhetoric because of its complicity in the dualistic separation of science and rhetoric. This tradition relegated sophism to only an incidental footnote (practically a shameful mistake) in that history.

while emphasizing the reciprocal interrelatedness of them.[28] Indeed, thinkers of a social pragmatist bent (such a Rorty and Fox Keller) agree that the ultimate significance of postmodernism cannot be dogmatically declared but will be socially negotiated in an evolving yet undetermined way.

Some general observations nonetheless can be made. The exclusive preoccupation with facts, certainty, and objectivity which has characterized science and technology is yielding to the validity of subjectivity and opinion. Rhetoric, for example, is becoming more apparent in technical communication, though it was "always already" there [always operative but only now recognized and validated]. This is rhetoric as the actual way in which we socially negotiate decisions, constructions, and ratifications. It is necessarily contemporary, relativistic, situation-specific, and socially responsive, and it must participate in the collateral areas of ethics and politics.

Scholars, teachers, and practitioners of technical communication are empowered by these postmodernist developments, especially in the face of the historical privileging of the generators of specialized knowledge. Postmodernism empowers us to criticize the authority, assumptions, and claims of science

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[28] Richard Rorty and Paul Feyerabend, for instance, do not reject science but only disprivilege it, putting it on par with other knowledge, belief systems, or world views. Likewise Evelyn Fox Keller and Sandra Harding do not reject science but call for the pluralistic co-existence of science and social constructivism, sex and gender.

and technology while it compels us to contextualize their practice. It also alerts us to be wary against using science and technology as a subterfuge from the messiness of social contingency and the weightiness of ethical judgments.[29]

[29] It would be a mistake, however, to embrace radical anti-formalism. Though postmodernism opposes the passive, unreflective use of received forms of expression or thought, it also affirms the sociality of our thoughts and expressions. To the extent that forms of expression such as the proposal or forms of thoughts such as the presenting of comprehensible, consensually validated support for one's claims are themselves socially negotiated and ratified, they are already instances of the sociality, contingency, and criticism which postmodernism advocates.